# ECAT Physics Chapter 12 Electrostatics

| Sr | Questions | Answers Choice |
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| 1 | If we plot graph between potential difference (V) and current (I) obeying ohm's law, it will give us | A. parabola<br>B. straight line<br>C. hyper bola<br>D. ellipse |
| 2 | A uniform resistance wire of Length L and diameter d has a resistance R. Another wire of same material has length, 4L and diameter 2d, the resistance will be | A. 2 R<br>B. R<br>C. R/2<br>D. R/4 |
| 3 | A sheet of aluminium foil of negligible thickness is introduced between the plates of a capacitor. The capacitance of the capacitor | A. Increases<br>B. Decreases<br>C. Remain unchanged<br>D. Becomes infinite |
| 4 | A point charge A of charge +4μC and another B of charge -1μC are placed in air at a distance 1 m apart. Then the distance of the point on the line joining the charge B, where the resultant electric field is zero, is (in m) | A. 2<br>B. 1<br>C. 0.5<br>D. 1.5 |
| 5 | A car battery has e.m.f 12 volt and internal resistance 5 x $10^{-2}$ohm. If it draws 60 ampere current, the terminal voltage of the battery will be | A. 5 volt<br>B. 3 volt<br>C. 15 volt<br>D. 9 volt |
| 6 | The unit of intensity of electric field is | A. newton/coluomb<br>B. jule/coluomb<br>C. volt x metre<br>D. newton/metre |
| 7 | Two point charges A and B separated by a distance R attract each other with a force of 12 x $10^{-3}$N. The force between A and B when the charges on them are doubled and distance is halved | A. 1.92 N<br>B. 19.2 N<br>C. 12 N<br>D. 0.192 N |
| 8 | The electric intensity outside the two oppositely charged parallel metal plates is | A. Maximum<br>B. Minimum<br>C. Zero<br>D. Infinite |
| 9 | Current provided by a battery is maximum when | A. Internal resistance equal to external resistance<br>B. Internal resistance is greater than external resistance<br>C. Internal resistance is less then external resistance<br>D. None of these |
| 10 | The earth's potential is taken as | A. Negative<br>B. Positive<br>C. Zero<br>D. Infinite |
| 11 | Coulomb force, when any material medium is placed between two charges | A. Increases<br>B. Decreases<br>C. Remain unchanged<br>D. None of these |
| 12 | The electric lines of force are | A. Imaginary<br>B. Physically existing everywhere<br>C. Physically existing near the charge<br>D. All of the above |
| 13 | A condenser of capacity 50μF is charged to 10 V.The energy stored is | A. 1.25 x 10<sup>-3</sup>J<br>B. 3.75 x 10<sup>-3</sup>J<br>C. 2.5 x 10<sup>-3</sup>J<br>D. 5 x 10<sup>-3</sup>J |
| 14 | The statement "the electric force of repulsion or attraction between two point charges is directly proportional to the product of the charges and inversely proportional to square of the distance between them" refer to | A. Coulomb's law<br>B. Gauss's law<br>C. Biot-Sarwat law<br>D. Ampere's law |
| | | A. 1.6 x 10<sup>19</sup>eV |

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| 15 | One joule is equal to | B. 6.25 x 10<sup>18</sup>eV<br>C. 1.6 x 18<sup>18</sup>eV<br>D. 6.25 x 10<sup>19</sup>eV |
| 16 | An alpha particle is accelerated through a potential difference of $10^6$volt. Its kinetic energy will be | A. 1 MeV<br>B. 2 MeV<br>C. 4 MeV<br>D. 8 MeV |
| 17 | The capacitance of a parallel plate capacitor depends upon | A. Area of the plates<br>B. Separation between the plates<br>C. Medium between the plates<br>D. All of the above |
| 18 | A 10 F capacitor is charged to a potential difference of 50 V and is connected to another uncharged capacitor in parallel. Now the common potential difference becomes 20 volt.The capacitance of second capacitor is | A. 10μF<br>B. 20μF<br>C. 30μF<br>D. 15μF |
| 19 | In a building, there are 15 bulbs of 40 watts, 5 bulbs of 100 watts, 5 fans of 80 watts and a heater of 1 kilowatt. The voltage of the electric main is 220 volts. The minimum efficiency of the main fuse of the building will be | A. 0.4 A<br>B. 11.4 A<br>C. 9.8 A<br>D. 10.6 A |
| 20 | A charge Q is divided into two parts q and Q - q and separated by a distance R. The force of repulsion between them will be maximum when | A. q = Q/4<br>B. q = Q/2<br>C. q = !<br>D. None of these |